CHAPTER 2
ALTERNATIVES

This chapter addresses how the past problems that affected the Abandoned Visitor Center were considered in identifying alternatives that would resolve the problems through a specific design process that would apply to any build alternative carried forward for detailed analysis. This chapter also describes the range of alternatives developed to address the Project purpose and need identified in Chapter 1. This chapter also discusses each alternative's ability to meet the Project purpose and need, and identifies the alternatives dismissed and those carried forward into Chapter 3 for further review. In addition, this chapter addresses resource protection measures to be incorporated into the Project and summarizes the impacts of the alternatives carried forward in this EA.

2.1 INTRODUCTION

As discussed in Chapter 1, the force of groundwater, expansive clays, water-bearing coal seams, and soil slumping pushed on the basement walls of the Abandoned Visitor Center, causing them to crack and move. This movement generated pressure on the structural support of the building (columns, beams, and roof trusses), causing damage on the main level as well as the basement. Soils and subsurface materials throughout the Theodore Roosevelt National Park North Unit are unstable due to past landslides, soil slumping, erosion events, and subsurface movement of groundwater into soils susceptible to expansion and movement.

To accommodate unstable soils and groundwater movement through Project area soils, the proposed visitor center would not have a basement and would be constructed with a deep foundation system including deeper piers. Figure 11 shows a diagram of the Minuteman Missile National Historic Site visitor center that was constructed with a similar deep foundation and pier system. Although the visitor center proposed at the North Unit would have a much smaller footprint and fewer piers, this provides an example of the foundation and pier system that would be used at any of the alternative sites selected for construction.

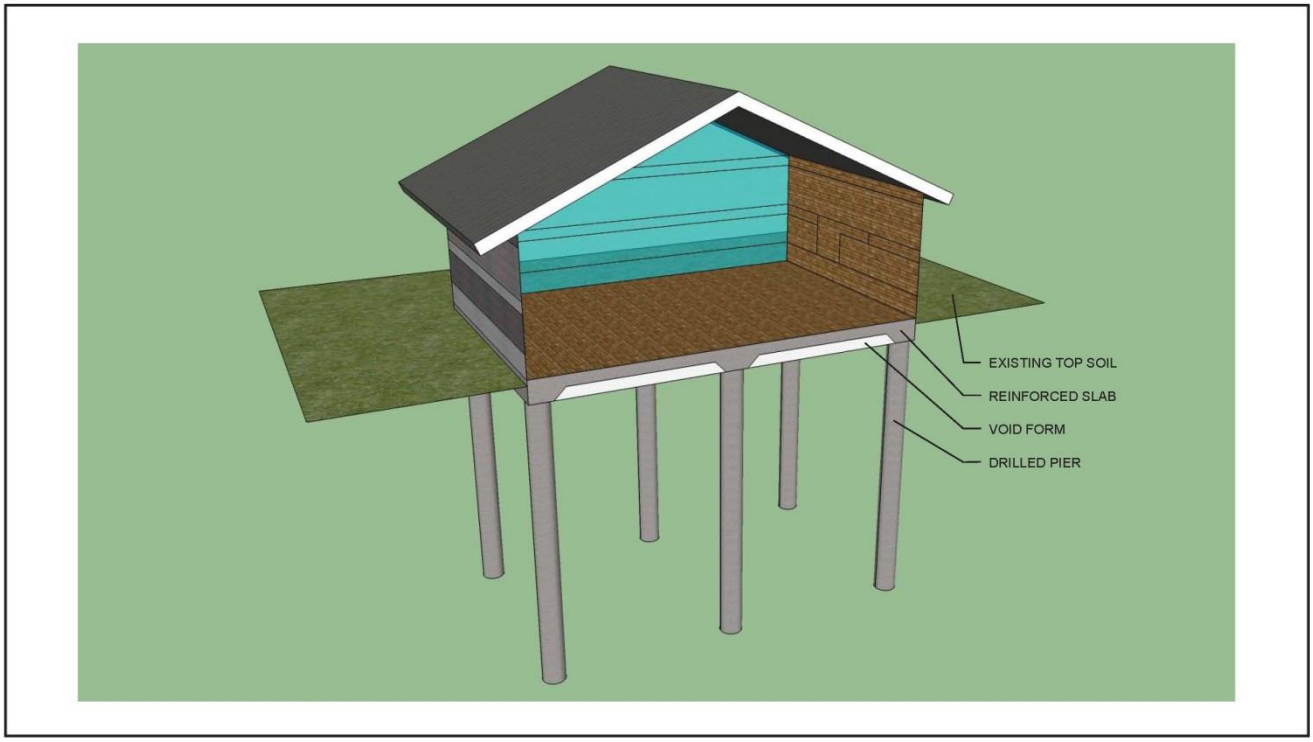
A deep foundation system typically includes piers, grade beams, and a structural floor. Piers are columns of reinforced concrete placed into the ground until a layer of sufficient strength and stability is reached. A grade beam is a horizontal reinforced concrete beam that transmits the load from weight-bearing walls, columns, and roof trusses of the building onto the piers. Both the pier caps and grade beams would extend below the frost depth, and would be constructed on a void form to resist expansive soil heave. A void form (material with air spaces) is needed to prevent swelling soil from lifting or cracking the concrete slab floor. The void form is made of a collapsible material with sufficient strength to support the concrete slab floor above, yet be deformed from below to prevent lift or damage to the floor. The structural floor would be a concrete slab (on top of the void form) resting on grade beams; there would be a minimum 12-inch void form beneath the floor and between the beams to resist the expansive soil heave. Consequently, the

walls and main floor of the building would not be susceptible to movement from subsurface water or expansive soil. The walls, columns, roof trusses, and main floor of the building would rest on the grade beams and piers, while the void space of the structural floor would contract as needed as soils expand.

The piers would extend down to a layer of sufficient strength and stability; the depth of the piers would be determined during the design process. The Abandoned Visitor Center was susceptible to forces pushing on basement walls and the foundation floor. The deep foundation would be designed to allow most of the force of water and expansive soils to move past the foundation. The proposed visitor center would be constructed to drain surface water away from the facility. The lack of a basement, the use of piers to support the foundation, and grading to drain water away from the proposed building would protect the structure from subsurface water and soil slumping impacts that occurred with the Abandoned Visitor Center.

All alternatives sites would require a deep foundation with a pier system.

Figure 11
Concept Sketch of Deep Foundation and Pier System



TYPICAL DRILLED PIER SYSTEM
FOR CONSTRUCTION IN UNSTABLE SOIL

2.2 RANGE OF ALTERNATIVES

As stated in Chapter 1, the park has closed the Abandoned Visitor Center for the Theodore Roosevelt National Park North Unit because of continued structural problems and is proposing to construct a new visitor center. During the scoping phase of the Project, NPS staff identified and briefly evaluated potential sites for a new visitor center (see Figure 12). A scoping document describing the sites under consideration was developed and provided to the public and resource agencies for feedback (see Chapter 4 for further information). Although no new alternatives were identified by resource agencies during the scoping process, the majority of public respondents recommended consideration of one or more additional site locations due to concerns over site stability.

The range of alternatives initially considered for the Project included three sites near the Abandoned Visitor Center (Alternative Sites 1, 2, and 3), two additional sites (Longhorn Flats Area and the Bison Handling Facility Area), and rehabilitation of the Abandoned Visitor Center (see Figure 12). Other sites were considered along the 14-mile-long Scenic Drive but were dropped from consideration for the following reasons:

- The sites are located past the winter closure gate on Scenic Drive.
- The sites are too far from the entrance to serve as an effective introductory contact point for visitors as they enter the park.
- Current infrastructure, including existing utilities, is too far from the sites.
- Access to the sites is inadequate.
- The site has too great a slope or other physical challenges.
- The new visitor center would be a visual detraction to visitors enjoying adjacent wilderness areas.

Based on public input, the park identified another potential site location for the new visitor center; this site is west of the Abandoned Visitor Center and is identified as Alternative Site 4 (see Figure 13).

The alternatives were evaluated based on their ability to meet the Project purpose and need and the following factors:

- Site construction suitability
    - Floodplain and/or wetlands
    - Drainage
    - Stability of soils
- Proximity to existing infrastructure
    - Existing utilities
    - Access
- Proximity to the park entrance to effectively serve as an introductory contact point for visitors as they enter the park

- Compatibility with current management zoning
- Avoiding a visual obstruction to those visitors enjoying a wilderness area experience

2.2.1 No Action Alternative

Under the No Action Alternative, which represents the status quo, NPS could continue to use the Camptender's Cottage and Quarters 205B as a Temporary Visitor Center and for administrative offices, respectively. The NPS could also utilize trailers currently placed (but not yet operational) in the vicinity of the Abandoned Visitor Center for these purposes. A porta-potty would likely remain at the east end of the Abandoned Visitor Center parking lot to accommodate park visitors and NPS entrance fee collectors. To mitigate safety concerns and contingent upon the availability of funds, the abandoned facility would eventually be demolished and the site revegetated. A handicap-accessible porta-potty is also used near the Camptender's Cottage while it is open for the season. The use of the Camptender's Cottage and Quarters 205B for functions originally performed in the Abandoned Visitor Center substantially reduces housing available for workers at the park. Housing is a critical issue in this area due to the ongoing oil boom, and the park would prefer to use these units for housing its permanent and seasonal workers. Although a ramp was constructed at the Temporary Visitor Center for compliance with the Americans with Disabilities Act (ADA), the use of the Camptender's Cottage for a visitor center is not a viable long-term option for the following reasons:

- The Camptender's Cottage is within the floodplain of the Little Missouri River and has a potential to flood. In many years, ice jams form that back up the flow of the river and flood this area. The cottage sustained damage from previous floods and required substantial repairs to remain operational. The most recent flood was in April 2009, when sandbags were placed around the cottage to protect it from rising waters.
- The Camptender's Cottage was not designed to support winter operations, and the plumbing must be shut off and water drained in early fall to protect pipes from bursting.
- The Camptender's Cottage is only a fraction of the size of the Abandoned Visitor Center, and the park's visitation numbers are expected to increase.
- Visitor center functions in the North Unit effectively cease in the winter with the closure of the Camptender's Cottage; the Temporary Visitor Center provides only modest support functions from May to October.

Figure 12
Project Alternative Sites

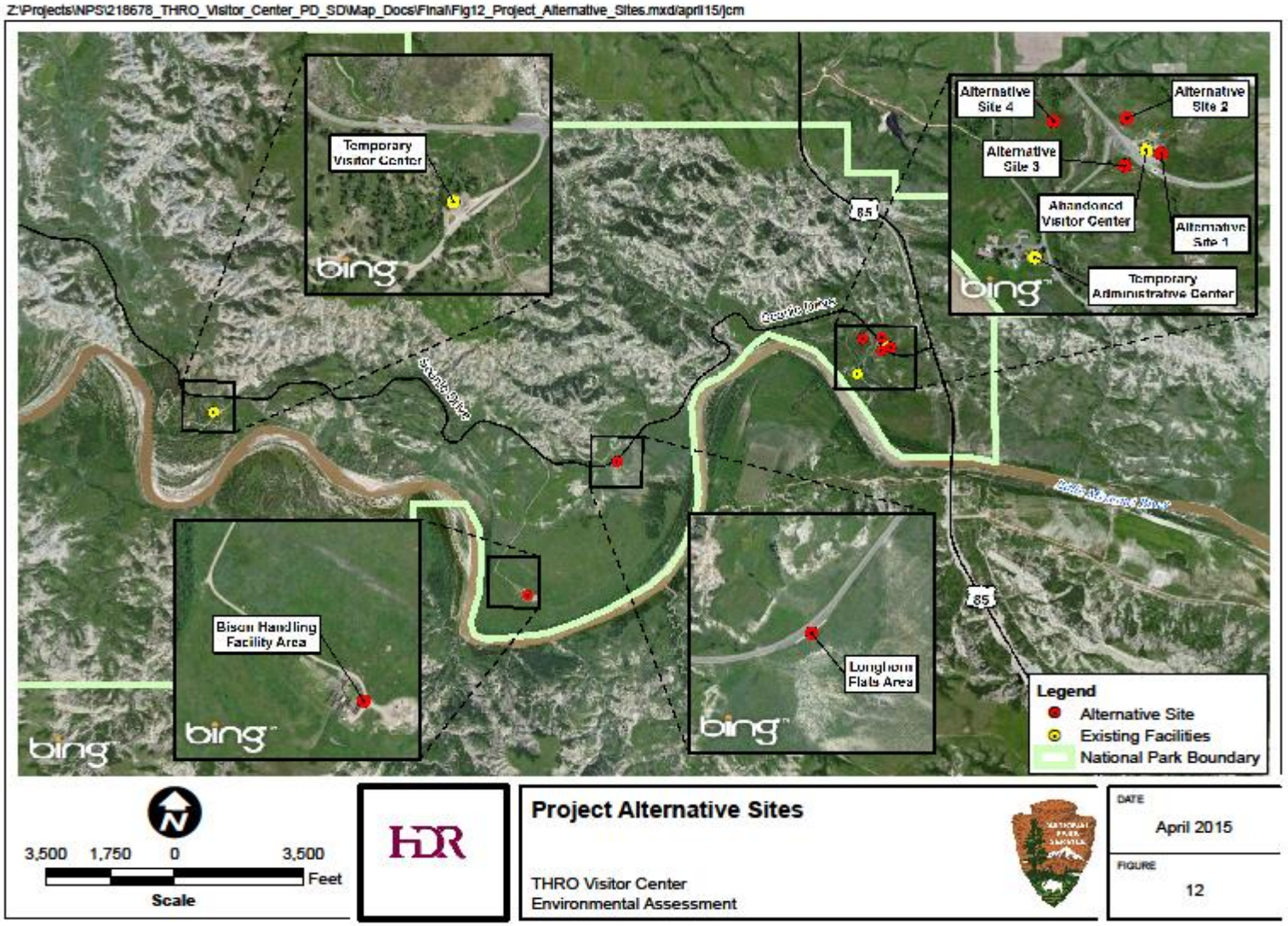
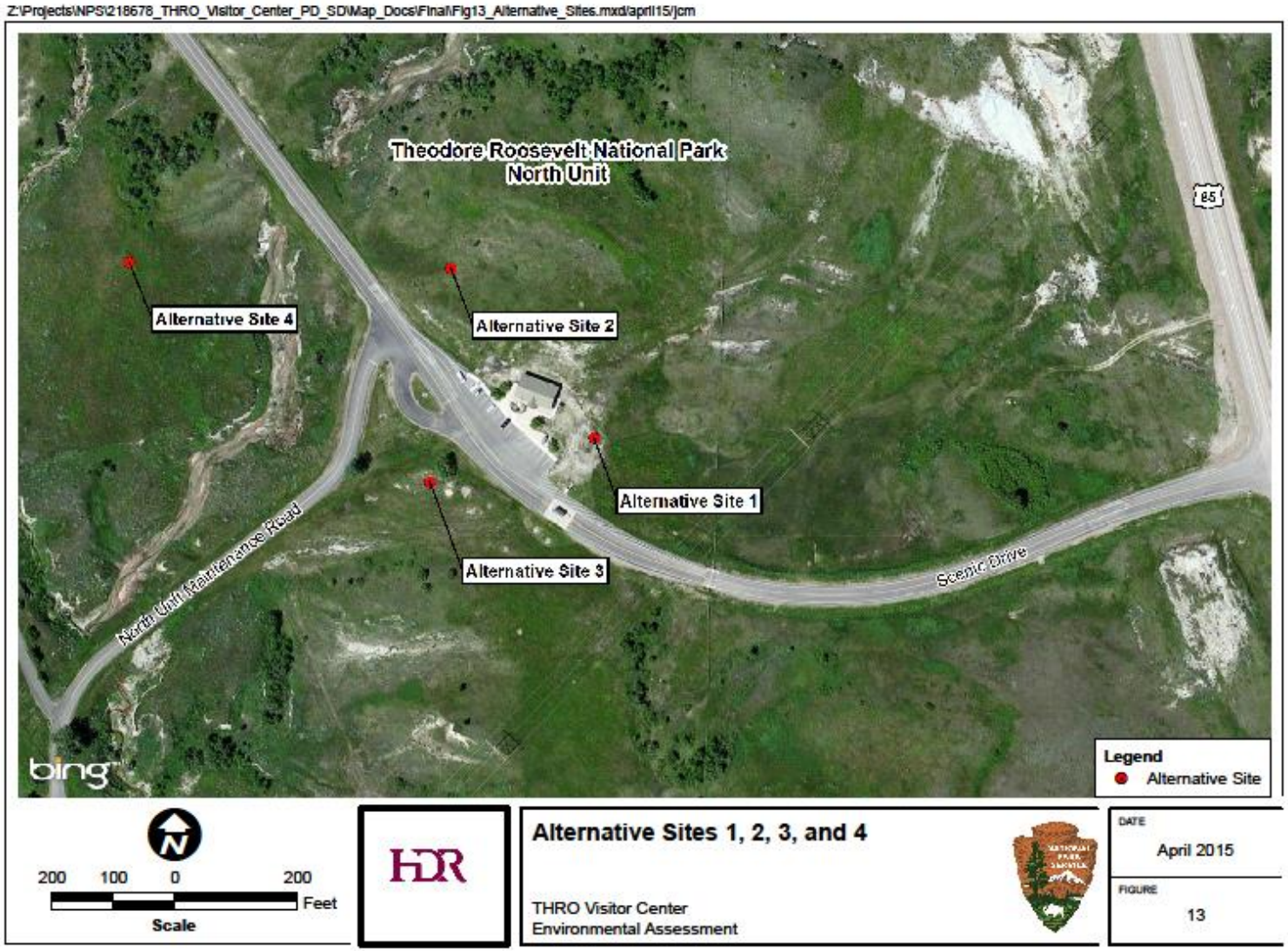


Figure 13
Alternative Sites 1, 2, 3, and 4



Regardless, the No Action Alternative would not fully meet the Project purpose and need because operations would be constrained by the physical limitations of the temporary facilities. However, the No Action Alternative was carried forward in this EA to serve as a baseline for comparison of impacts as required by the National Environmental Policy Act (NEPA) (42 USC 4321-4347).

2.2.2 Alternative Sites 1, 2, 3, and 4

Four alternative sites near the Abandoned Visitor Center have been identified to take advantage of existing infrastructure and close proximity to the North Unit entrance off of U.S. 85 (see Figure 13). Alternative Sites 1, 2, 3, and 4 are on land classified as "Development Zone," where permanent structures to support visitor and management activities are permitted; construction of a new visitor center anywhere in this zone is consistent with land use objectives and values. All four sites are well outside of designated wilderness and are not expected to impact wilderness values or character. All four sites are outside of the 100-year floodplain of the Little Missouri River and have drainage to a tributary of the river. If one of the four sites is selected for construction, materials removed from the Abandoned Visitor Center would be moved to the new facility, the Abandoned Visitor Center would be demolished, and the Camptender's Cottage and Quarters 205B would be returned to their previous function as housing units.

Figures 14, 15, 16, and 17 show an area that would include the estimated (maximum) footprint for construction of Alternative Sites 1, 2, 3, and 4, respectively. This footprint accommodates flexibility in design for placement of facilities (building, parking lot, sidewalk, and access road) of the proposed visitor center at each of the Build Alternative sites. The actual (reduced) footprint for the visitor center, parking lot, sidewalk, and access road would all occur within the defined area for each site, and a deep foundation and pier system would be used to construct the facility. After this EA is completed and a site is selected, a detailed design process would then be initiated to locate and orient the proposed facilities. The footprint for demolition of the Abandoned Visitor Center is also shown in the figures. Demolition of the Abandoned Visitor Center would include removing the topside structure and retaining most of the basement floor and four basement walls to enhance site stability. Holes would be drilled in the walls to allow flow of groundwater, fill material would be placed in the basement, and the site would be graded and leveled.

The new visitor center would be a single-story building not expected to exceed 4,700 square feet in size, which is approximately the same size as the Abandoned Visitor Center. The proposed facility would include visitor amenities such as a lobby, multi-purpose room, and an area designated for interpretive exhibits. Other visitor amenities would include restrooms and a cooperating association bookstore. The facility would also provide space for NPS administrative operations such as offices, conference room, a break room, staff restrooms, and miscellaneous storage. The facility would be designed and built according to the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standards, with attention given to its orientation on the site, energy efficiency, sustainability, and other green building qualities.

The visitor center would be constructed without a basement and with a deep foundation and pier system to provide a stable foundation. The intent is to protect the building from

shifting and to avoid the problems that the Abandoned Visitor Center had. As described in Section 3.2, Geological Resources, each of the four alternative sites have similar geological constraints for construction. The depth of the piers would be dependent on the specific underlying geology.

NPS did not consider demolishing the Abandoned Visitor Center and rebuilding in the same spot because all subsurface materials (basement floor, walls, and foundation) would need to be removed and the site stabilized and graded before construction of a new visitor center could commence, delaying the start of construction. Additionally, the site has slumped and is unstable, potentially causing worker safety issues during excavation. Though all Build Alternative sites are potentially unstable, the site of the Abandoned Visitor Center is in the direct path of an actively slumping slope. The potential risk of slumping for each Alternative Site is discussed below.

Based on engineering practices alone, the proposed visitor center could be constructed at any of the four Build Alternative sites. Evaluation of each Build Alternative accounted for other factors, as discussed in Section 2.1.

Alternative Site 1

The center of Alternative Site 1 is located approximately 120 feet southeast of the center of the Abandoned Visitor Center and is maintained as an open space (see Figure 14). The site is fairly level, with a gentle, approximately 4 percent slope toward the south. The site is farther away from the steep sloped hill north of the Abandoned Visitor Center; the hill is prone to slumping, contains coal seams at the surface, and includes coal seams below the ground surface. The subsurface coal seams are water bearing and expected to continue to cause subsurface site instability. The area includes landslide material that is prone to slumping. The center of Alternative Site 1 is approximately 120 feet from the hill whereas the existing facility is only approximately 20 feet from the hill. Most of the basement floor and four basement walls of the nearby Abandoned Visitor Center would be retained to enhance site stability. Fill would be added to the basement void and would cover the area. Alternative Site 1 would be graded, and additional fill material could be needed to create a level building site. Construction of the visitor center at this site would include a deep foundation and pier system.

The majority of land that would be affected by construction at Alternative Site 1 is closely mowed and was previously disturbed by construction of the Abandoned Visitor Center. No wetlands or surface waters are present. The estimated construction footprint of the new facility would be approximately 1 acre (see Figure 14) and is located on maintained grasses and areas modified for previous site construction (NPS, April 18, 2013). The Abandoned Visitor Center would be demolished, rubble would be removed, and the site would be graded. The estimated footprint for demolition of the Abandoned Visitor Center is approximately 0.2 acre. The existing parking lot for the Abandoned Visitor Center is adjacent to Alternative Site 1 and would be reused. Similarly, the utility lines for the Abandoned Visitor Center would be reused and connected to the proposed facility for Alternative Site 1. Alternative Site 1 was carried forward in this EA because it is logistically feasible and meets the Project purpose and need.

Figure 14
Alternative Site 1

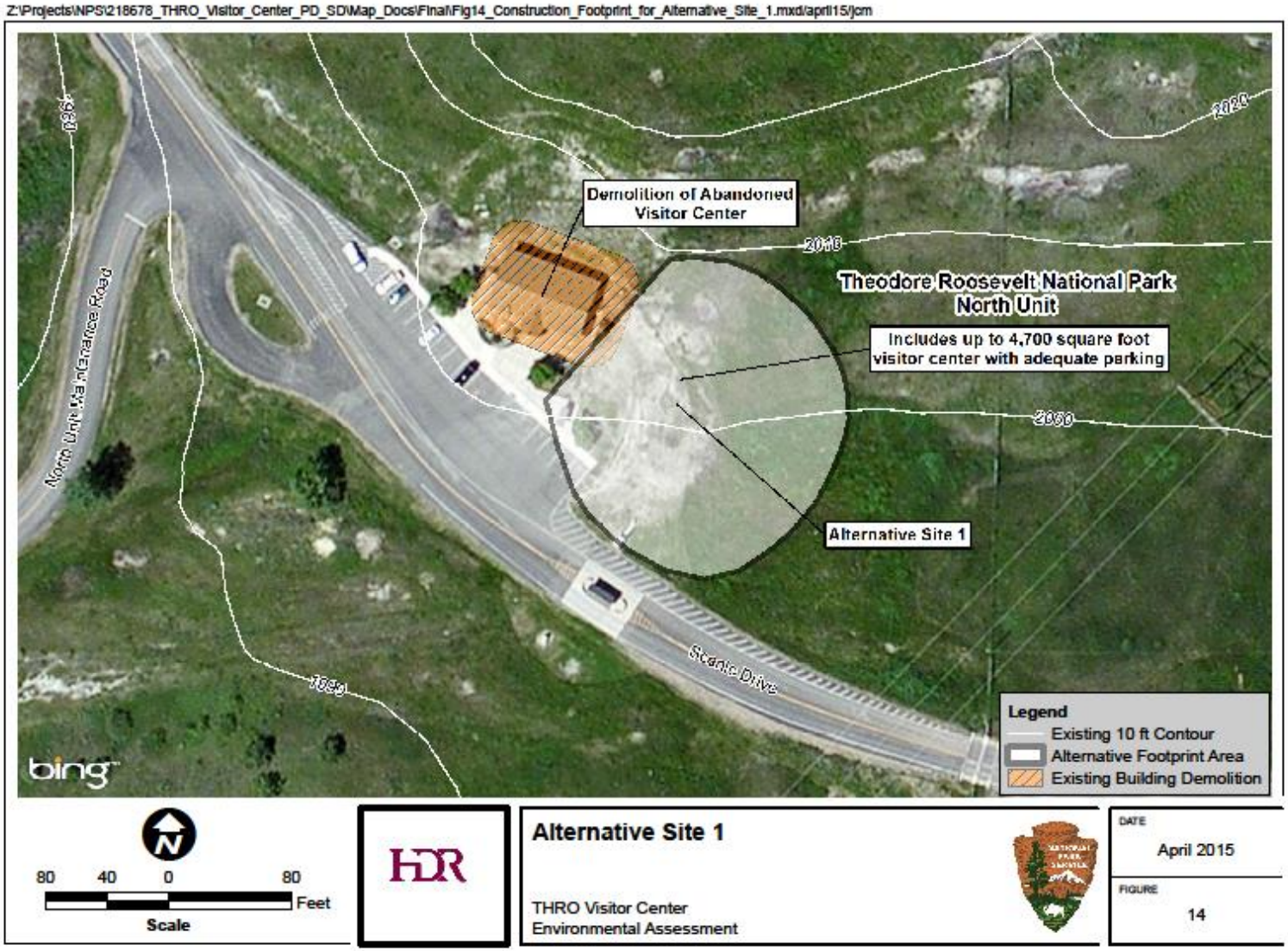


Figure 15
Alternative Site 2

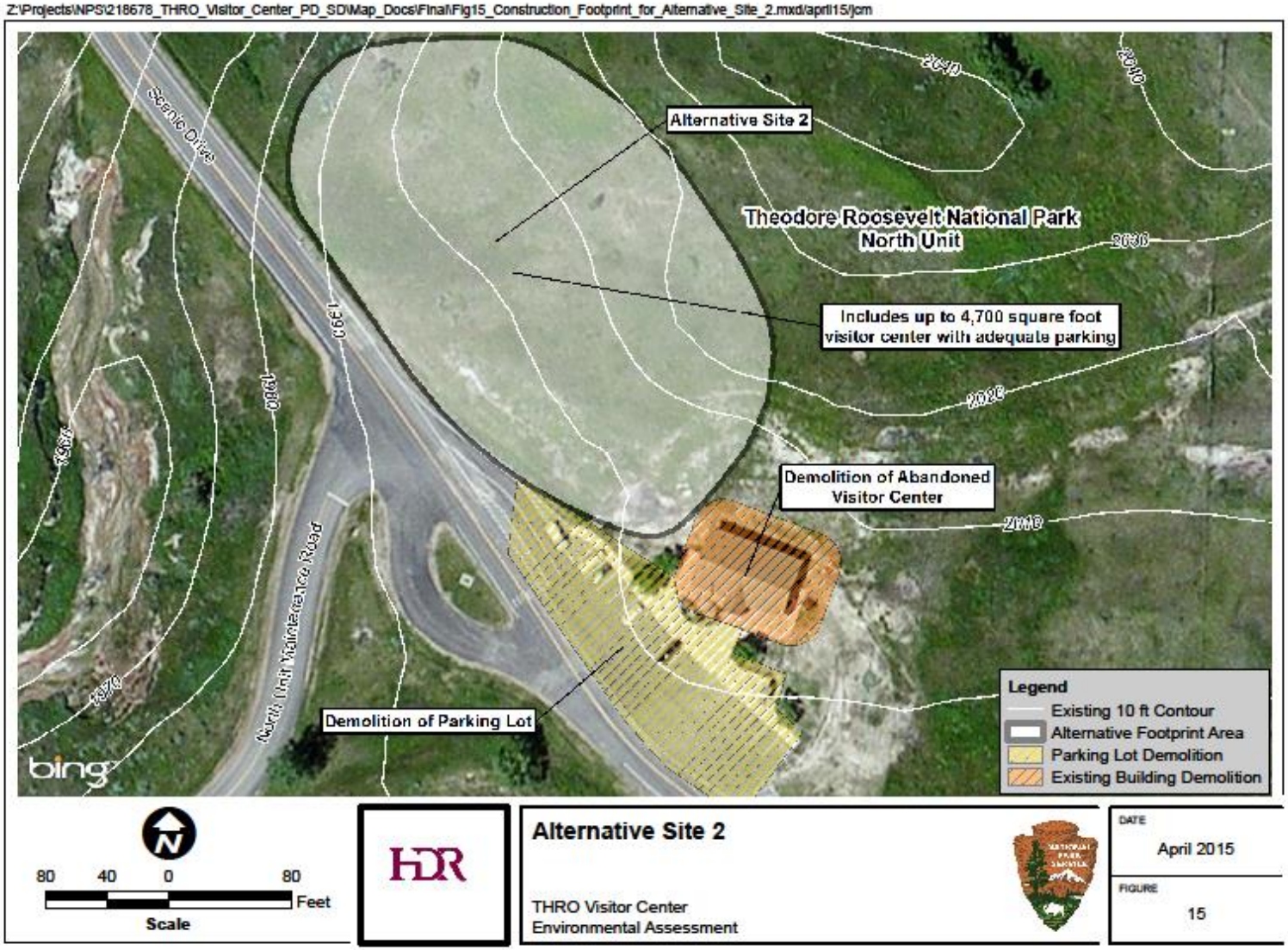


Figure 16
Alternative Site 3

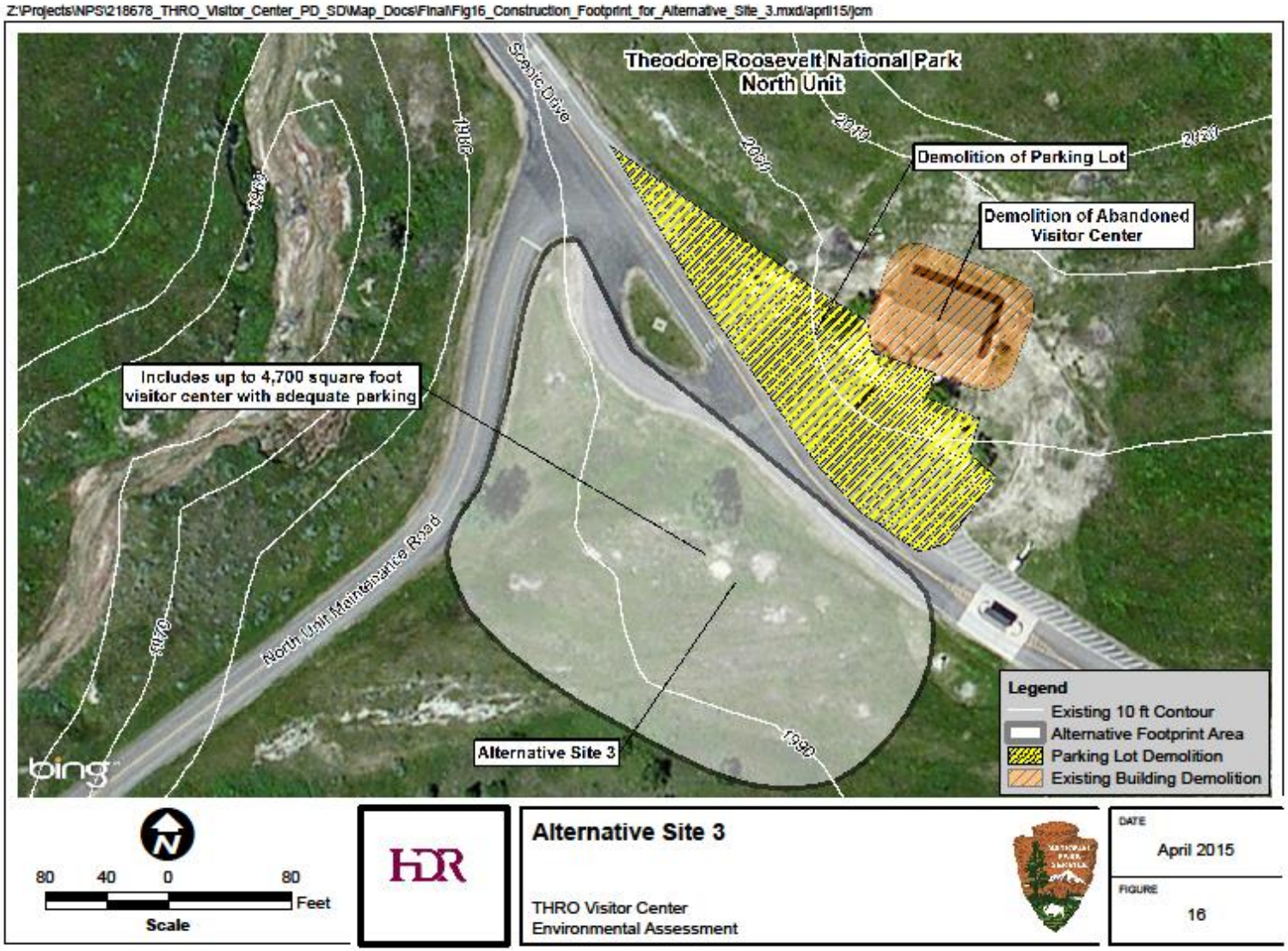
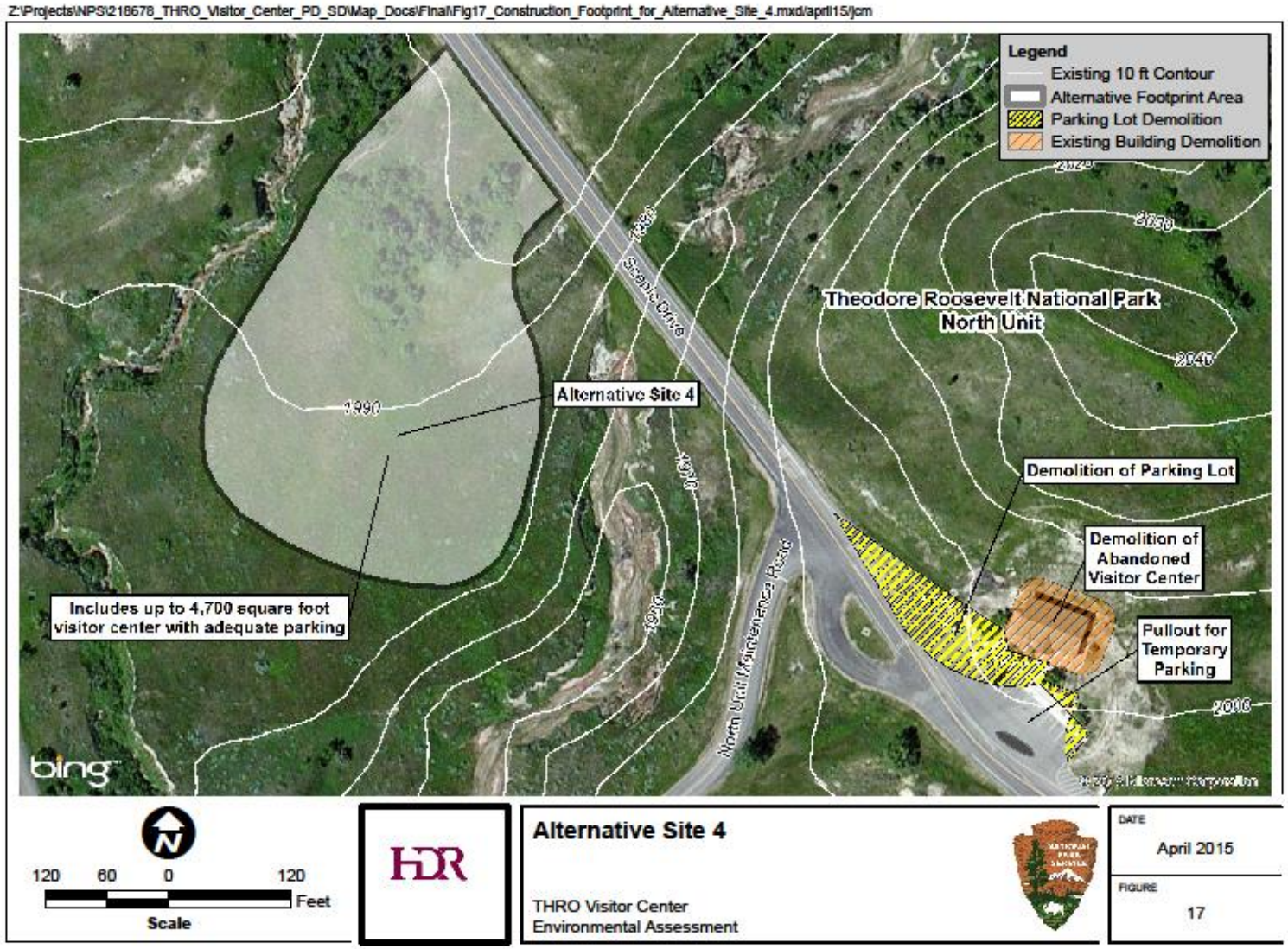


Figure 17
Alternative Site 4



Alternative Site 2

The center of Alternative Site 2 is located approximately 250 feet northwest of the center of the Abandoned Visitor Center (see Figure 15). With the exception of the western end of Alternative Site 2, the existing land rises up steeply from Scenic Drive and the Abandoned Visitor Center. The site includes a hillside approximately 15 feet above the elevation of Scenic Drive near the southern portion of the site. This hill includes landslide material that is prone to slumping, and includes coal seams below the ground surface. Similar to the other alternative sites, construction of the visitor center at this site would include a deep foundation and pier system. Near the middle of the site, slopes are less steep and the elevation difference is not as great. The site slopes approximately 10 to 12 percent to the west. The site would likely require grading to create a level building site regardless of whether the facilities would be located closer to the center of the site further up on the hillside, or at a lower elevation near Scenic Drive. The estimated construction footprint would be approximately 2 acres (see Figure 15) and is located in natural grassland. Existing vegetation on the site is dominated by needle and thread, blue grama, and threadleaf sedge (NPS, April 18, 2013) with a greater presence of smooth brome and crested wheatgrass closer to the road shoulder. No wetlands or surface waters are present.

Building the new visitor center at this site would require constructing a new parking lot and demolishing most of the existing parking lot, with the exception of a portion to be reused for the access road. NPS considered reuse of the existing parking lot for parking at Alternative Site 2 but discounted the option because the path uphill to meet ADA requirements and the distance to the visitor center could discourage some visitors from stopping as they enter the park. Access to this site would be provided through construction of a 30-foot-wide access road directly off Scenic Drive. The Abandoned Visitor Center would be demolished and rubble would be removed. The site would be graded, and fill material would be added to create a level building site. The estimated footprint for demolition of the Abandoned Visitor Center and parking lot is approximately 0.6 acre. If the access road would be located adjacent to the existing parking lot, a small area (approximately 0.1 acre) of the west end of the parking lot pavement could be retained for the start of the access road into Alternative Site 2. Existing utilities could be used by extending the connections. Construction of an access road, parking lot, and extending utilities increases the cost of this alternative as compared to Alternative Site 1 where existing utilities, parking, and access can be used. This additional infrastructure would be a capital improvement requiring long-term maintenance. The additional grading to develop this site also adds cost to this alternative. Alternative Site 2 was carried forward in this EA because it is logistically feasible and meets the Project purpose and need.

Alternative Site 3

The center of Alternative Site 3 is located approximately 240 feet southwest of, and across Scenic Drive from, the center of the Abandoned Visitor Center (see Figure 16). The site includes a turn-around area for vehicles and slopes approximately 5 percent toward the south and west. The site would be graded, and fill material could be needed to create a level building site. The estimated construction footprint of Alternative Site 3 would be approximately 2 acres (see Figure 14). Approximately 70 percent of the site is

developed land and approximately 30 percent of the site is grassland; existing vegetation in the grassland is dominated by crested wheatgrass and smooth brome (NPS, April 18, 2013). No wetlands or surface waters are present within this footprint; an unnamed tributary of the Little Missouri River is approximately 50 feet downgradient from the site, west of the North Unit Maintenance Road. The tributary has a steep erosion scarp (that is, a linear steep face or slope) that can result in slumping. The area includes landslide material, and potentially includes subsurface coal seams that can transmit groundwater and cause subsurface instability. Similar to the other alternative sites, construction of the visitor center at this site would include a deep foundation and pier system.

The existing parking lot would be demolished, and a new parking lot would be constructed to the south of Scenic Drive, adjacent to the proposed facility. All of the existing parking lot would be demolished for construction on Alternative Site 3 because the parking lot is desired to be on the same side of the road as the visitor center for safety considerations. Access to this site would be provided through construction of a 30-foot-wide access road, likely off Scenic Drive. The Abandoned Visitor Center would be demolished, rubble would be removed, fill would be added, and the site would be graded. The estimated footprint for demolition of the Abandoned Visitor Center and parking lot is approximately 0.7 acre. Existing utilities could be used by extending the connections. Construction of an access road, parking lot, and extending utilities increases the cost of this alternative as compared to Alternative Site 1 where existing utilities, parking, and access can be used. The new access road would be a capital improvement requiring long-term maintenance. Alternative Site 3 was carried forward in this EA because it is logistically feasible and meets the Project purpose and need.

Alternative Site 4

The center of Alternative Site 4 is located approximately 700 feet west of, and 15 feet lower in elevation, than the center of the Abandoned Visitor Center (see Figure 17). The site is bound on the north by Scenic Drive and on the east, south, and west by relatively deep and unnamed drainages that carry intermittent water flow south to the Little Missouri River. These drainages have a steep erosion scarp that can result in localized slumping. The area includes alluvium and potentially includes subsurface coal seams. Similar to the other alternative sites, construction of the visitor center at this site would include a deep foundation and pier system. The site is relatively flat and gently sloping north to south at approximately 1 to 4 percent, and east to west at approximately 1 to 2 percent. This upland site is in close proximity to a road and storage building to the west and the parks maintenance yard, sewage lagoons and residential houses to the south. Site vegetation is dominated by crested wheatgrass and contains no wetlands or otherwise unique vegetative communities (NPS, April 18, 2013).

The site would be graded, and fill material could be needed to create a level building site. The estimated construction footprint of Alternative Site 4 would be approximately 3 acres (see Figure 17) and is located in grassland habitat. A portion of the existing parking lot would be demolished, and approximately 0.2 acre of the existing parking lot would remain for a pull out and temporary parking for visitors stopping at the interpretive kiosk or wanting to take pictures of the park entrance sign.

A new parking lot would be constructed to the south of Scenic Drive, adjacent to the proposed facility. Access to this site would be provided through construction of a 30-

foot-wide access road directly off Scenic Drive. The Abandoned Visitor Center would be demolished, rubble would be removed, fill would be added, and the site would be graded. The estimated footprint for demolition of the Abandoned Visitor Center and a portion of the parking lot is approximately 0.5 acre. Electrical and telecommunications lines are present along Scenic Drive, but there are no sewer or water utilities on this site. Sewer and water lines would need to be extended from existing lines, most likely from the area of the Abandoned Visitor Center west to this site. Approximately 0.2 acre of ground would be disturbed for extension of these utilities. Construction of an access road, parking lot, and utilities increases the cost of this alternative as compared to Alternative Site 1 where existing utilities, parking, and access can be used. The additional infrastructure would be a capital improvement requiring long-term maintenance. Alternative Site 4 was developed in response to internal and public scoping comments and was carried forward in this EA because it is logistically feasible and meets the Project purpose and need.

2.2.3 Longhorn Flats Area Alternative

The Longhorn Flats Area Alternative site is located approximately 1.5 miles southwest of the Abandoned Visitor Center and is situated approximately 2 miles in driving distance from the park entrance. Adjacent to Scenic Drive, this site would be easily accessible and provides a scenic view of the Little Missouri River valley and surrounding hills. This site is a large and relatively flat, natural site that drains poorly and is in close proximity to the Little Missouri River floodplain. The site is approximately 2,000 feet west of the Little Missouri River and approximately 500 feet west of the 100-year floodplain of the Little Missouri River. Designated wilderness is approximately 1,400 feet to the north of this site.

A new visitor center and parking lot constructed in this area would be subject to drainage issues and/or flooding, and would add unwanted elements such as development and sound to an otherwise natural and scenic landscape. This site and the adjacent area is classified under the 1987 GMP as "Natural Zone," which means it is managed to perpetuate natural processes and primitive character. The site is also distant from current infrastructure, including existing utilities. The Longhorn Flats Area Alternative was eliminated from further consideration due to its conflict with current management zoning, its distance from the park entrance and existing infrastructure, its location near the 100-year floodplain, drainage issues, unstable soil and subsurface conditions, and visual intrusiveness.

2.2.4 Bison Handling Facility Area Alternative

The Bison Handling Facility Area Alternative site is located approximately 2.3 miles southwest of the Abandoned Visitor Center and is situated approximately 3.5 miles in driving distance from the park entrance. The Bison Handling Facility Area Alternative site is accessible from Scenic Drive via a maintained but narrow gravel road and is a large, relatively flat site located in the 100-year floodplain of the Little Missouri River. The closest wilderness boundary to the site is approximately 3,000 feet to the south. However, the area includes substantial lengths of fencing used to guide and contain bison during periodic roundup operations. During bison roundups, bison located throughout the park are herded to this site with the ultimate goal of removing excess animals from

the park and restoring bison numbers to within management goals. When bison roundups are not scheduled, this area is occasionally used as a materials staging site for scenic road repair projects and other facility maintenance projects.

A new visitor facility in the general proximity of the bison handling facility would not likely be considered a visual obstruction to a wilderness experience of visitors. A visitor center and parking lot constructed in this area would be subject to flooding because of their close proximity to the Little Missouri River. While the bison handling facility itself is classified as "Development Zone," the proposed visitor center would be within land zoned as "Natural." Therefore, placing a visitor center at this site would be inconsistent with management objectives for that zone. In addition, a visitor center and parking lot would conflict with the safe and efficient movement of bison into and out of the nearby handling facility. The site is also distant from current infrastructure, including existing utilities and a two-lane asphalt road. The Bison Handling Facility Area Alternative was eliminated from further consideration due to its distance from the park entrance and existing infrastructure, its location in the 100-year floodplain, unstable soil and subsurface conditions, and the potential conflict with bison roundup operations.

2.2.5 Rehabilitation of the Abandoned Visitor Center

The condition of the Abandoned Visitor Center was reviewed for its potential for repair and correction of noted deficiencies (HDR, 2013). However, repair and improvement of the Abandoned Visitor Center is not feasible for the following reasons:

- The embankment to the north of the building has failed and slumped, exerting additional pressure on the building after mitigation procedures to repair the building were completed in 2001.
- The building has moved vertically in several locations.
- The floor is uneven and has separated from the walls in several locations.
- The foundation and stairs are cracked.
- Several door frames are out of alignment, which has made doors hard to open and close.
- Floor trusses are separated from the walls.
- Roof trusses have shifted and can no longer bear design loads.
- Groundwater would continue to create instability in the basement. A deep foundation and pier system would be needed to provide stability to the building, requiring excavation of the basement and addition of suitable fill before the subsurface protection system could be installed.

2.3 ALTERNATIVES CARRIED FORWARD IN THIS EA

For the reasons stated in Section 2.1, the No Action Alternative and Alternative Sites 1, 2, 3, and 4 were carried forward for further consideration and analysis in this EA. Alternative Sites 1, 2, 3, and 4 will be subsequently referred to as Build Alternatives 1, 2, 3, and 4 in this EA.

The NPS does not have a preferred alternative at this time. Based on public and agency input on the EA, and design and funding considerations, the NPS will identify a preferred alternative and notify the public prior to completion of the NEPA process.

2.4 RESOURCE PROTECTION MEASURES

With implementation of any of the Build Alternatives and construction of a new visitor center, similar measures would be taken to protect resources in the Project area. To avoid or minimize impacts of the Project, best management practices (BMPs) and mitigation measures would be implemented. The BMPs and mitigation measures are not intended to reduce impacts on these resources to less than significant; these are normal activities to reduce impacts inherent with the actions proposed by this Project. The BMPs and mitigation measures presented in Appendix B would be incorporated into the construction documents for the Project.

2.5 SUMMARY OF IMPACTS

Potential impacts of the No Action Alternative and the Build Alternatives are summarized in Table 1. For each impact topic, the underlined text indicates the degree of the overall impact of the bulleted items that follow. These impacts are discussed in detail, along with a description of the affected environment, in Chapter 3.

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Table 1
Summary of Impacts[1]

Impact Topic	No Action Alternative	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Geological Resources	Short- and long-term moderate adverse local impact from continuing deterioration of Abandoned Visitor Center site caused by slumping and instability of ground.	Short-term minor adverse local impact from construction (site grading and demolition of Abandoned Visitor Center). Long-term minor adverse local impact due to site stability and restoration of land cover. Deep foundation and pier system would protect structure from damage.	Short-term minor to moderate adverse local impact from construction (site grading and demolition of Abandoned Visitor Center and most of existing parking lot) depending on location of facilities within the site (on hill or level with Scenic Drive with retaining wall). Long-term minor adverse local impact due to site stability if constructed on hill with restoration of land cover; moderate if constructed level with Scenic Drive and retaining wall, with restoration of land cover. Deep foundation and pier system would protect structure from damage.	Short-term minor adverse local impact from construction (site grading, addition of fill material, and demolition of Abandoned Visitor Center and existing parking lot). Long-term minor adverse local impact due to site stability and restoration of land cover. Deep foundation and pier system would protect structure from damage.	Short-term minor adverse local impact from construction (site grading and demolition of Abandoned Visitor Center and most of existing parking lot). Long-term minor adverse local impact due to site stability and restoration of land cover. Deep foundation and pier system would protect structure from damage.

Impact Topic	No Action Alternative	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Invasive Non-Native Species	Short- and long-term negligible adverse local impact due to little to no disturbance of land cover. Restoration of the Abandoned visitor Center could be colonized by invasive plants unless controlled. Present best management practices (BMPs) would continue.	Short-term minor adverse local impact from establishment of invasive non-native species from construction of a new visitor center and demolition of the Abandoned Visitor Center. Long-term negligible adverse local impact due to BMPs.	Short-term minor adverse local impact from establishment of invasive non-native species from construction of a new visitor center on hill and demolition of the Abandoned Visitor Center. Short-term moderate adverse local impact from construction level with Scenic Drive due to greater disturbance and use of retaining wall. Long-term negligible adverse local impact due to BMPs.	Short-term minor adverse local impact from establishment of invasive non-native species from construction of a new visitor center and demolition of the Abandoned Visitor Center. Long-term negligible adverse local impact due to BMPs.	Short-term minor adverse local impact from establishment of invasive non-native species from construction of a new visitor center and demolition of the Abandoned Visitor Center. Slightly greater impact than Build Alternatives 1 and 3 due to disturbance of approximately 0.2 acre for utility extensions. Long-term negligible adverse local impact due to BMPs.
Visitor Experience and Aesthetic Resources	Short-term moderate adverse impact throughout the park on visitor experience and aesthetics from continued use of Temporary Visitor Center and presence of structurally unsafe Abandoned Visitor Center until it's demolished and the site restored. Long-term moderate adverse impact on visitor experience due to inadequate facilities throughout the park would continue.	Short-term minor adverse impact throughout the park on aesthetics and visitor experience from construction of proposed visitor center. Long-term moderate beneficial impact throughout the park from easily identifiable and improved facilities. Proposed visitor center would aesthetically blend into existing landscape; resulting in a long-term negligible adverse local impact.	Short-term moderate adverse local impact on aesthetics from construction, and short-term minor adverse impact throughout Theodore Roosevelt National Park North Unit on visitor experience. There would be a long-term moderate beneficial impact throughout Theodore Roosevelt National Park North Unit from easily identifiable and improved facilities. Level with Scenic Drive, the proposed visitor center would better blend into existing landscape, minimizing adverse impact on the natural landscape; construction higher on the hilltop would result in a greater long-term adverse impact.	Short-term moderate adverse local impact on aesthetics from construction (due to greater disturbance than Build Alternative 1). Short-term minor adverse impact throughout the park on visitor experience. Long-term moderate beneficial impact throughout the park from easily identifiable and improved facilities. Proposed visitor center would blend into existing landscape, minimizing scenic impact; construction on larger, level site would result in a long-term minor adverse local impact.	Short-term moderate adverse local impact on aesthetics from construction (due to greater disturbance than Build Alternative 1). Short-term minor adverse impact throughout the park on visitor experience. Long-term moderate beneficial impact throughout the park from easily identifiable and improved facilities (the location would experience less noise from US 85 and would provide a view capturing more of the Park's natural landscape) than Build Alternatives 1, 2, and 3).

Impact Topic	No Action Alternative	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Recreation Resources	Short- and long-term minor adverse local impact from the use of less functional and inadequately sized temporary visitor Center structures.	Short-term minor adverse local impact due to construction. Long-term moderate beneficial local impact from improved facilities.	Short-term minor adverse local impact due to construction. Long-term moderate beneficial local impact from improved facilities.	Short-term minor adverse local impact due to construction. Long-term moderate beneficial local impact from improved facilities.	Short-term minor adverse local impact due to construction. Long-term moderate beneficial local impact from improved facilities.

Note:

[1] *Impacts were characterized based on the following factors:*

- *Duration of the impact: short-term or long-term.*
- *Intensity of the impact: negligible, minor, moderate, or major.*
- *Type of impact: beneficial or adverse.*
- *Context or area affected by the impact: local (within the Project area and immediate vicinity), throughout Theodore Roosevelt National Park North Unit, or regional (extending beyond Theodore Roosevelt National Park North Unit boundaries).*

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